

What is claimed is:

- 1 A communication terminal connectable to a plurality
of communication systems, said communication terminal
5 comprising communication system selection means for
deciding the communication system to which to connect,
based upon a communication link quality, and a connection
policy set for each of said plurality of said
communication systems.
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- 2 The communication terminal according to claim 1,
wherein said connection policy includes a priority of a
connection; and
- said communication system selection means comprises
- 15 means for making a connection to the communication system
of which said communication link quality is equal to or
more than a first threshold, and yet of which said
priority is highest, with a change in the communication
link quality.
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- 3 The communication terminal according to claim 2, said
communication terminal wherein said connection policy
includes connection advisability information indicating
advisability of a connection set for each of said
- 25 plurality of said communication systems; and

said communication system selection means comprises means for making a connection to the communication system of which said priority is highest, out of the communication systems of which said communication link
5 quality is equal to or more than said first threshold, and yet of which said connection advisability information indicates pro, with a change in the communication link quality.

10 **4** The communication terminal according to claim 3, said communication terminal comprises means for making a connection to the communication system of which said connection advisability information indicating con in response to a user's manual operation.

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5 The communication terminal according to claim 2, said communication terminal comprises means for setting so that said first threshold and said priority for each of said communication systems have a negative correlation.

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6 The communication terminal according to claim 1, said communication terminal characterized in that said communication system selection means, which has a maximum simultaneous-connection communication system number, is
25 means for disconnecting a connection to the communication

system of which said priority is lowest in a case where the communication system number in connection exceeded said maximum simultaneous-connection communication system number, with a change in the communication link quality.

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7 The communication terminal according to claim 1, said communication terminal characterized in that:

said connection policy includes a second threshold of the communication link quality set for each of a plurality of the communication systems, with which a connection
10 should be terminated; and

said communication system selection means is means for disconnecting a connection to the communication system of which said communication link quality amounted to less
15 than said second threshold, with a change in the communication link quality.

8 The communication terminal according to claim 7, said communication terminal characterized in that:

20 said connection policy includes disconnection advisability information indicating advisability of a disconnection set for each of said plurality of said communication systems; and

said communication system selection means is means for
25 disconnecting a connection to the communication system of

which said priority is lowest, out of the communication systems of which said communication link quality is less than said second threshold, and yet of which said disconnection advisability information indicates pro, with
5 a change in the communication link quality.

9 The communication terminal according to claim 8, said communication terminal comprising means for disconnecting a connection to the communication system of which said
10 disconnection advisability information indicates con in response to a user's manual operation, or in response to deterioration in the above quality to the degree that the communication link is impossible to maintain.

15 10 The communication terminal according to claim 7, said communication terminal comprising means for setting so that said second threshold and said priority for each of said communication systems have a negative correlation.

20 11 The communication terminal according to claim 1, said communication terminal characterized in:

that said connection policy includes notification advisability information indicating whether or not a change in the connection status is notified to a user; and

25 including means for, in a case where said notification

advisability information indicates pro, making a
notification to the user in response to a
connection/disconnection to/from the communication system
by said communication system selection means for each of
5 said plurality of said communication systems.

12 The communication terminal according to claim 1,
said communication terminal characterized in:

that said connection policy includes authentication
10 advisability information indicating whether or not the
user is prompted for inputting authentication information
at the time of connection for each of said plurality of
said communication systems; and

including means for, in a case where said
15 authentication advisability information indicates pro,
prompting the user for inputting the authentication
information at the time of initiating the connection by
said communication system selection means to acquire and
set a cryptography key for communication from the
20 communication system in a case where the authentication
succeeded.

13 The communication terminal according to claim 2,
said communication terminal characterized in:

25 that at least one of said priority, said first

threshold, said second threshold, said connection
advisability information, said disconnection advisability
information, said notification advisability information,
and said authentication advisability information is
5 notified from said communication system side; and
including means for receiving and setting this.

14 The communication terminal according to claim 1,
said communication terminal characterized in including
10 means for receiving a notification of offer-enable
throughput based upon a congestion status of a wireless
interface and a wire network from each of said plurality
of said communication systems to set said priority so that
said priority has a positive correlation as against said
15 throughput.

15 The communication terminal according to claim 1,
said communication terminal comprising means for receiving
a notification of accounting information from each of said
20 plurality of said communication systems to set said
priority so that said priority has a negative correlation
as against said accounting information.

16 The communication terminal according to one of claim
25 1 to claim 15, wherein said communication terminal is at

least one of a wireless communication system and a wire
communication system.

17 A base station for making communication with a
5 communication terminal connectable to a plurality of
communication systems, and yet adapted to select the
communication system to which a connection should be
initiated according to a communication link quality and a
connection policy, said base station comprising means for
10 informing said communication terminal of said connection
policy.

18 The base station according to claim 17, said base
station characterized in that said connection policy is at
15 least one of a connection priority, a communication link
quality threshold with which a connection should be
initiated, connection advisability information indicating
advisability of a connection, a threshold of the
communication link quality with which a connection should
20 be terminated, disconnection advisability information
indicating advisability of a disconnection, notification
advisability information indicating whether or not a
change in a connection status is notified to a user, and
authentication advisability information indicating whether
25 or not the user is prompted for inputting authentication

information at the time of connection.

19 The base station according to claim 17, said base station comprising the means for:

5 observing a congestion status of a wireless interface and a wire network; and

informing said communication terminal of offer-enable throughput based upon this observation data.

10 **20** The base station according to claim 17, said base station characterized in including means for informing about an accounting condition for said communication terminal's connection that is required of this terminal.

15 **21** A network management server for making communication with a communication terminal connectable to a plurality of communication systems, and yet adapted to select the communication system to which a connection should be initiated according to a communication link quality and a
20 connection policy, said server characterized in including means for informing said communication terminal of said connection policy.

22 The server according to claim 21, wherein said
25 connection policy is at least one of a connection priority,

a communication link quality threshold with which a connection should be initiated, connection advisability information indicating advisability of a connection, a threshold of the communication link quality with which a connection should be terminated, disconnection advisability information indicating advisability of a disconnection, notification advisability information indicating whether or not a change in a connection status is notified to a user, and authentication advisability information indicating whether or not the user is prompted for inputting authentication information at the time of connection.

23 The server according to claim 21, said server comprising:

reception means for receiving a congestion situation of a wireless interface;

means for observing a congestion status of a wire network; and

means for informing said communication terminal of offer-enable throughput based upon this observation data, and data received by said reception means.

24 The server according to claim 21, said server comprising means for informing about an accounting

condition for said communication terminal's connection that is required of this terminal.

25 A handover method, between communication systems, of
5 a communication terminal connectable to a plurality of
communication systems, said handover method comprising a
communication system selection step of, in said
communication terminal, deciding the communication system
to which to connect, based upon a communication link
10 quality, and a connection policy set for each of said
plurality of said communication systems.

26 The handover method according to claim 25, said
handover method characterized in that:

15 said connection policy includes a priority of a
connection; and

said communication system selection step is a step of
making a connection to the communication system, of which
said communication link quality is equal to or more than a
20 first threshold, and yet of which said priority is highest,
with a change in the communication link quality.

27 The handover method according to claim 26, said
handover method characterized in that:

25 said connection policy includes connection

advisability information indicating advisability of a connection set for each of said plurality of said communication systems; and

5 said communication system selection step is a step of making a connection to the communication system of which said priority is highest, out of the communication systems, of which said communication link quality is equal to or more than said first threshold, and yet of which said connection advisability information indicates pro, with a
10 change in the communication link quality.

28 The handover method according to claim 27, said handover method comprising a step of making a connection to the communication system of which said connection
15 advisability information indicating con in response to a user's manual operation.

29 The handover method according to claim 25, said handover method comprising a step of setting so that said
20 first threshold and said priority for each of said communication systems have a negative correlation.

30 The handover method according to claim 25, said handover method characterized in:
25 having a maximum simultaneous-connection communication

system number provided; and

that said communication system selection step is a step of disconnecting a connection to the communication system of which said priority is lowest in a case where
5 the number of the communication systems in connection exceeded said maximum simultaneous-connection communication system number, with a change in the communication link quality.

10 **31** The handover method according to claim 25, said handover method characterized in that:

said connection policy includes a second threshold of the communication link quality set for each of said plurality of said communication systems, with which a
15 connection should be terminated; and

said communication system selection step is a step of disconnecting a connection to the communication system of which said communication link quality amounted to less than said second threshold, with a change in the
20 communication link quality.

32 The handover method according to claim 31, said handover method characterized in that:

said connection policy includes disconnection
25 advisability information indicating advisability of a

disconnection set for each of said plurality of said communication systems; and

said communication system selection step is a step of disconnecting a connection to the communication system of which said priority is lowest, out of the communication systems of which said communication link quality is less than said second threshold, and yet of which said disconnection advisability information indicates pro, with a change in the communication link quality.

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33 The handover method according to claim 32, said handover method comprising a step of disconnecting a connection to the communication system of which said disconnection advisability information indicates con in response to a user's manual operation, or in response to deterioration in the above quality to the degree that the communication link is impossible to maintain.

34 The handover method according to claim 31, said handover method comprising a step of setting so that said second threshold and said priority for each of said communication systems have a negative correlation.

35 The handover method according to claim 25, said handover method characterized in:

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that said connection policy includes notification advisability information indicating whether or not a change in the connection status is notified to a user for each of said plurality of said communication systems; and

5 including a step of, in a case where said notification advisability information indicates pro, making a notification to the user in response to a connection/disconnection to/from the communication system by said communication system selection step.

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36 The handover method according to claim 25, said handover method characterized in:

that said connection policy includes authentication advisability information indicating whether or not the
15 user is prompted for inputting authentication information at the time of connection for each of said plurality of said communication systems; and

including a step of, in a case where said authentication advisability information indicates pro,
20 prompting the user for inputting the authentication information at the time of initiating a connection by said communication system selection step to acquire and set a cryptography key for communication from the communication system in a case where the authentication succeeded.

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37 The handover method according to claim 26, said handover method comprising the steps of:

notifying at least one of said priority, said first threshold, said second threshold, said connection

5 advisability information, said disconnection advisability information, said notification advisability information, and said authentication advisability information from said communication system side; and

receiving and setting this on said communication
10 terminal side.

38 The handover method according to claim 25, said handover method comprising the steps of:

making a notification of offer-enable throughput based
15 upon a congestion status of a wireless interface and a wire network from each of said plurality of said communication systems; and

setting said priority on said communication terminal side so that said priority has a positive correlation as
20 against said throughput.

39 The handover method according to claim 25, said handover method comprising the steps of:

making a notification of accounting information from
25 each of said plurality of said communication systems;

receiving this accounting information on said
communication terminal side; and

setting said priority so that said priority has a
negative correlation as against said accounting
5 information.

40 The handover method according to claim 25, wherein
said communication system is at least one of a wireless
communication system and a wire communication system.

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41 A network system having a function that a
communication terminal connectable to a plurality of
communication systems makes a handover between
communication systems, said network system characterized
15 in that said communication terminal includes means for
deciding the communication system to which to connect
according to a communication link quality and a connection
policy.

20 **42** The network system according to claim 41, wherein
said network system comprising means for informing said
communication terminal of said connection policy.

43 The network system according to claim 41, said
25 network system characterized in that said connection

policy is at least one of a connection priority, a communication link quality threshold with which a connection should be initiated, connection advisability information indicating advisability of a connection, a
5 threshold of the communication link quality with which a connection should be terminated, disconnection advisability information indicating advisability of a disconnection, notification advisability information indicating whether or not a change in a connection status
10 is notified to a user, and authentication advisability information indicating whether or not the user is prompted for inputting authentication information at the time of connection.

15 **44** The network system according to claim 41, said network system characterized in including the means for:
observing a congestion status of a wireless interface and a wire network; and
informing said communication terminal of offer-enable
20 throughput based upon this observation data.

45 The network system according to claim 41, said network system characterized in including means for informing about an accounting condition for said
25 communication terminal's connection that is required of

this terminal.

46 A computer-readable program for controlling an operation of a communication terminal connectable to a plurality of communication systems, said program
5 characterized in including a communication system selection step of deciding the communication system to which to connect based upon a communication link quality and a connection policy set for each of said plurality of
10 said communication systems.

47 A computer-readable program for controlling an operation of a base station that makes communication with a communication terminal connectable to a plurality of
15 communication systems and yet adapted to decided the communication system to which to connect based upon a communication link quality and a connection policy, said program characterized in including a step of informing said communication terminal of said connection policy.

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48 A computer-readable program for controlling an operation of a network management server that makes communication with a communication terminal connectable to a plurality of communication systems and yet adapted to
25 decided the communication system to which to connect based

upon a communication link quality and a connection policy,
said program characterized in including a step of
informing said communication terminal of said connection
policy.

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49 A computer-readable recording medium stored a
program for controlling an operation of a communication
terminal connectable to a plurality of communication
systems, said program characterized in including a
10 communication system selection step of deciding the
communication system to which to connect based upon a
communication link quality and a connection policy set for
each of said plurality of said communication systems.

15 **50** A computer-readable recording medium stored a
program for controlling an operation of a base station
that makes communication with a communication terminal
connectable to a plurality of communication systems and
yet adapted to decided the communication system to which
20 to connect based upon a communication link quality and a
connection policy, said program characterized in including
a step of informing said communication terminal of said
connection policy.

25 **51** A computer-readable recording medium stored a

program for controlling an operation of a network
management server that makes communication with a
communication terminal connectable to a plurality of
communication systems and yet adapted to decided the
5 communication system to which to connect based upon a
communication link quality and a connection policy, said
program characterized in including a step of informing
said communication terminal of said connection policy.